

## **Guidelines for Preparing Individual Posters**

### **Purpose**

This supplement is intended to guide you in the preparation of posters for the 4<sup>th</sup> Biennial CALFED Science Conference. Please consider them as thoughtful suggestions designed to enhance your presentation for the enjoyment and understanding of your audience.

### **Promoting Personal Contact, Communication of Research Information, and Exchange of Ideas**

Poster exhibition is an important vehicle for communicating research information and results at scientific conferences. The purpose of a scientific poster is to promote personal contact and the exchange of ideas on an individual level. This cannot take place during a talk, but is easy to achieve during a poster session.

Posters should be eye-catching as well as scientifically accurate and tastefully laid out. The poster itself should act as bait, and as a summary, with illustrative material arranged in a manner which attracts and interests the delegates. The poster should be able to stand on its own, although the main transfer of information is achieved when interested parties meet the authors for detailed chats about their work.

The poster has many advantages, despite difficulties of preparation, and can have a greater influence than visuals fleetingly glimpsed during a talk. One of the most appealing advantages of a poster is that it can be displayed in your department to share with colleagues before and after the conference.

### **A Vehicle for Communicating Sound Science**

New and exciting ideas based on sound research can draw deserved recognition through a well-written abstract and an eye-catching poster design. Once the viewer has come to take a closer look at an interesting-looking display, all aspects of the design and the science work together to keep, or lose, the viewer's attention.

A successful poster tells an interesting research story; but a key ingredient, of course, is good, sound science. Studies emphasizing interdisciplinary science, and those that have broad application and/or implications, are the type most likely to be accepted for inclusion in a poster session and receive considerable feedback. Good science, uncluttered and colorful design, legibility, brevity of text, and straightforward organization equal a successful poster.

## Planning

Poster preparation should not be regarded as an ordeal, but should be fun and provide a sense of creativity and satisfaction; therefore, don't leave the planning and preparation of your poster till the last minute.

- Plan ahead! You have probably heard this again and again. That is because it is IMPORTANT!
- Preparing a poster will take as much time as you let it. Allocate your time wisely.
- There are always things that go wrong, so do not wait until the last minute to do even a simple task.
- This is a public presentation; by planning carefully, striving to be clear in what you say and how you say it, and assuming a professional attitude you will avoid making it a public spectacle.

### *Estimating Time*

- If you have little experience making posters, it will take longer (estimate 2 weeks at the very minimum).
- Do you have the data you will need? Will you need the help of outside agencies?
- How much time will you need to prepare the data for presentation (figures, photographs, etc.)?
- Does material need to be sent out and returned (photographic services, collaborators)?
- Planning ahead is particularly important if photographs are to be used. Allow time for at least two rounds of photographic processing to take place—2 to 2 1/2 weeks—just in case.
- Too much lead time, however, encourages endless fussing about. Do the poster to the best of your ability, then go do something else.

### *Determining Central Message and Content*

- Determine the one essential concept you would like to get across to the audience.
- Re-read your abstract once again—are those statements still accurate?

## General Layout

### *Approach*

In a room full of posters, consider the visual impact your presentation needs to make in order to attract readers. You need to design your poster to be as eye-catching and attractive as possible. A large or bright center of interest can draw the eye to the most important aspect of the poster—for example, a simplified, bold cross section illustrating a structural feature, a colorful paleogeographic map, a blowup photo of a new species, or a large outcrop photo illustrating depositional environments.

The basic rules are simplicity, clarity, and legibility—avoid clutter, eschew unnecessary data, make everything legible from at least 3 feet, and attempt to communicate your message clearly, even to the non-experts in your field.

Make sure your presentation flows in a logical sequence. It is important to present the information in a sequence which is easy to follow. It should be obvious where to start inspecting the poster and where to go from there (generally left to right, top to bottom). The component parts should be numbered or employs arrows to facilitate this logical progression or have arrows that graphically lead the viewer through the display (see examples below). The poster should not rely upon your verbal explanation to link together the various portions.

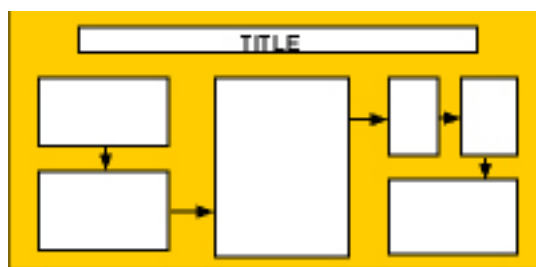
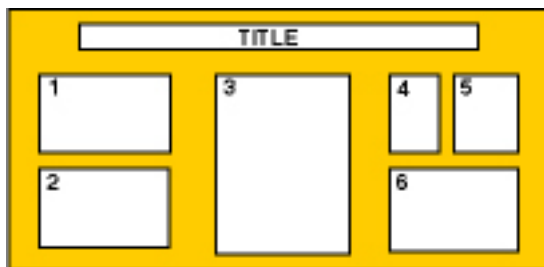
Arrange the layout before you prepare the content. Make a scale drawing of your layout. Have a few colleagues comment on the overall design before final drafting. If you have access to professional drafting or design personnel, ask for their suggestions and help.

Participants may not have had the opportunity to read the abstract of a poster presentation before they walk into the display area. Nevertheless, a poster should NOT be a standard paper (or an abstract) in pictures or, worse still, in words.

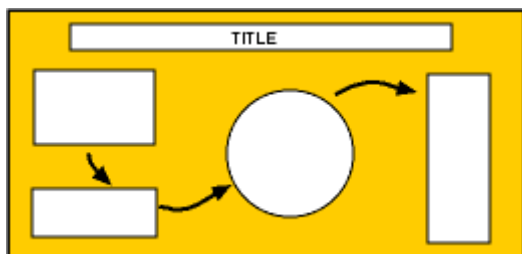
### *Size, Space, and Overall Design*

- Poster boards measure 8 feet (wide) x 4 feet (high).
- At first glance, at a distance of about 15 feet away, the viewer should see an easy-to-read title and an uncluttered, neat arrangement of visual elements and text.
- Leave some open space in the design. Work with 40% open space, 30% visual elements, and 30% text.
- Arrange the material into columns, and use landscape rather than portrait format. More content will be at eye level, which makes reading and interpretation easier.
- Determine a logical sequence for the content you will be presenting. Consider using numbers (36 to 48 points), lines, and arrows to help identify the organization and

flow of sections in the poster. (See examples that follow).



- Use elements of different sizes and proportions or shapes to increase visual interest.



- Organize the content into sections: Conclusions, Methods, Data/Results, Implications/Recommendations.
- For Conclusions: Present your central message clearly and quickly. Try placing your conclusion at the upper left hand corner of your poster, or as an expanded subtitle. Consider using a larger size (36 points) for the Conclusion text.
- For Methods: Use photographs, diagrams, or illustrations. Minimize the amount of text. Consider using a smaller size (18 points) for Methods and other text.
- For Data/Results: Use figures, charts, line graphs, or tabular data. Eliminate all unnecessary data. Use color to distinguish between and/or unify data series.
- For Implications/Recommendations:

## Title

Attention will invariably be drawn to posters with a crisp, clean design and a snappy title. The title must have the audience in mind. Use the title to grab the attention of the viewer; think of a title as a newspaper headline vying for attention. The title can be provocative, for example, ending in a question mark.

- The title should be readable from about 15 feet away.
- The title should be concise, the letters should be bold and at least 5 cm (2 inches or 84 points) high, preferably larger. Think BIG!
- The text under the title should include the author's names and their institution or organization affiliations. Subheadings should be about 1 to 3 cm, 0.5 to 1.5 inches,

or 36 to 72 points high.

- If space permits, use first names for authors to facilitate interactions. Middle initials (John Q. Public) and titles (Ph.D.) are seldom necessary.
- Use abbreviations where possible. City names, or even states, often may be dropped from the institutional affiliations.
- Some authors include the logo of their institution or organization and their own photo, which can be very helpful if the author is to be identified at the poster session.

## Text

### *Approach*

The text should be concise, legible and easily comprehended. Keep text on each panel relatively short and to the point. More than 25 lines won't get read, but 15 to 18 usually will.

- Choose a simple font such as Times, Helvetica or Prestige Elite and stick with it. Avoid overuse of outlining and shadowing, it can be distracting. To make something stand out, use a larger font size, bold or underline instead.
- Present supporting text in brief segments along with appropriate illustrations. State the significance of the findings forcefully and concisely at the end. Aim for "Wow!" from the viewer.

### *Format*

- The text should be large enough to be read easily from at least 6 feet.
- Framing the text with a border ( ) can help readers to focus.
- Text can be presented as short "bullet" lists.
- For section headings (Conclusions, Methods, Results, etc.) use 36 point, bold type.
- For supporting text and captions use 18 to 24 point, bold type.
- This is 18 point type, the smallest size you should use.

## • This is 24 point type. Better?

- Use 1.5-line or double-spacing between lines of text. Use left justification and ragged right sides.

- San serif fonts (fonts that have characters without “tails” “curlicues” or other embellishments) are easiest to read.
- Options for fonts include Helvetica, Arial, Geneva, Times Roman, Palatino, Century Schoolbook, Courier, and Prestige. These fonts represent a range of letter spacing and letter heights. Choose one font and use it consistently.
- Capitals and lower-case letters in combination ARE MUCH EASIER TO READ THAN ALL CAPITALS.
- Add emphasis by using a larger font size, bold type, underline, or color. Avoid overuse of outlining or shadowing.
- Italics are difficult to read; use only with Latin species names.

## Visual Elements

### *Approach*

Posters primarily are visual presentations. Good, self-explanatory visual (non-text) elements make a successful poster. Whenever possible, use graphs, diagrams, illustrations, charts, figures, photographs, tables, or lists instead of text to get your points across.

All visual elements should be clear, large and uncluttered. A minimal amount of text should be used to support the visuals. Use regions of empty space between poster elements to differentiate and accentuate the visual elements. Cut the number of visual elements to the minimum, but make sure that they are really good quality. Artful illustrations, luminous colors, or exquisite computer-rendered drawings do not substitute for content.

Be sure to get permission if you use someone else's graphic material and acknowledge the creator on the poster. If you have access to professional drafting or design personnel, ask for their suggestions and help.

### *Format*

- The larger the better. Visual elements should be visible easily from at least 6 feet.
- Design around 40% empty space, 30% visual elements, and 30% text.
- Careful use of 2 or 3 colors for emphasis is valuable; overuse is not.
- Remove all non-essential information from graphs and tables (data curves not discussed by the poster; excess grid lines in tables).
- Eliminate legends and keys.

- Label data lines in graphs directly using at least 18 point type.
- Line drawings (e.g., maps, diagrams, conceptual models, etc.) should use a line weight no thinner than 1 mm thick (2 point stroke width). Bolder lines are preferable.
- Labels or arrows should be bold and easily seen.
- Use contrast and colors for emphasis. Use colors to distinguish different data groups in graphs.
- Avoid using patterns or open bars in histograms. Use borders around each figure. Border colors can be used to link related presentations of data.
- Keep all illustrations simple and leave out extraneous details.
- Convert tabular data to a graphic display, if possible. Try scatter plots, polar plots, bar graphs, or triangular diagrams.
- Enlarged colored photographs are extremely attractive. Custom photo processing may be more expensive, but offers rapid turn-around and precise color balancing. Color poster prints, 30 x 46 cm or 50 x 76 cm, from photographic slides or negatives can be ordered for a modest price at most photo shops. Smaller images (e.g., 20 x 30 cm) can be printed on a color inkjet or laser printer.

### *Extras*

- Experiment with visual elements by mounting them separately on foam board or matte board which you then fasten to the background. This can add depth and life to your poster.
- Colored transparency overlays are useful in comparing and contrasting graphic results.

## **Using Color**

### *Approach*

A colored poster board background that contrasts well with the text is an eye-catching asset. When applying color, some authors prefer soft, muted tones; others like deep or very bright ones. A mixture of different colored backgrounds can also be very effective; however, too many colors or too many type styles can be confusing. The temptation is to use color everywhere, but don't. The viewer's eye will jump erratically around the poster instead of tracking through it to the crucial points.

Be aware that lighting in the display area may not be optimal. Most poster sessions are held in halls lit with harsh fluorescent light. If exact colors are important to the data, balance those colors for use with fluorescent lighting. Also, all colors will be intensified, so bright (saturated) colors may become unpleasant to view.

Color is easy to apply to illustrations that are drafted on a computer using a standard drawing program (e.g., Illustrator, Photoshop, Freehand, Canvas, Corel Draw). Such programs provide the opportunity of selecting from millions of colors, and adjusting hue, chroma, and value so they are most effective.

### *Format*

- Soft, muted colors, or shades of gray, are best for the background. Use more intense colors as borders or for emphasis, but be conservative.
- Using two to three related background colors (for Conclusions, Results, Interpretation sections) will unify the poster.
- Avoid saturated, fluorescent colors which make text hard to read at close range.
- Color can enhance the hues or contrast of photographs. Use a light background with darker photos; a dark background with lighter photos.
- Use a neutral background (gray) to emphasize color in photos; a white background to reduce the impact of colored photos.

### **When Time Runs Short**

With an increasing reliance placed upon poster presentations for information transfer at meetings, there comes an increased impatience with poorly presented materials. Those who choose to live on the edge should note that:

- Many larger meetings will have computers available for modifying posters. These facilities are, however, usually crowded.
- There are always photo supply stores near the meeting which will sell you poster materials.
- If you are unfamiliar with the city, ask the hotel concierge for local businesses which might be able to help. Remember to tip!
- Many hotels will have photocopy and Fax machines for guest use, and telecommunication ports in the hotel rooms.
- The world of portable computers and the Internet offers interesting possibilities for a graceful recovery. Leave your poster on a server and you can access it from a remote site.
- Before you leave for the trip, make a final backup copy and leave the disk in an obvious place. That way, you can have someone who has stayed behind print portions of the poster and fax them to you.



## What Not To Do

- Don't present too much information. Present only enough data to support your conclusions. You should make the significance and originality of the work very clear because viewers from other specialties may not be aware of its importance.
- Don't present a hand written poster. If you do not have access to a computer and laser or color printer, use plastic lettering templates with permanent markers which are inexpensive and widely available.

## Storing and Protecting Your Poster for Travel

- If possible, have the poster laminated so it will travel better and won't become damaged.
- Transport your poster in a plastic or other sturdy tube, if it easily rolls up.
- If you know you will be flying to the meeting, carry the poster with you. Make poster elements and storage portable enough that they can be included with your carry-on-luggage.
- If you are travelling with your poster in your luggage, be aware that it could get lost. It might be a good idea to make a duplicate poster and leave it in the care of someone who you can be in touch with easily and who can ship it to you via overnight delivery.

## At the Conference

- Poster boards measure 8 feet (wide) x 4 feet (high). Materials may be provided to hang posters. Normally one poster board is sufficient for one presentation.
- You may have only a short time to set up your display; so prepare in advance. Bring a poster set-up kit: include tape measure, string, clear push-pins, T-pins, thumb tacks, double-stick tape, Velcro, scissors, glue, tissue paper, marking pens, a few envelopes, and a folder.
- Frequently poster presenters attach an folder or envelope to the board containing their abstract, 8.5" x 10" prints of the poster, their business cards or other information they wish to provide.
- You might wish to bring a camera. While your poster is still hanging and in pristine condition, get somebody to take a photograph of you in front of your masterpiece.
- Remember, the conference organizers reserve the right to refuse to display any poster which does not conform to its specifications. Even if a bad poster is displayed, it will only be a reflection on the authors.

## Internet Help

All material presented above was taken and condensed from the following sources:

[http://www.kumc.edu/SAH/OTEd/jradel/Poster\\_Presentations/PstrStart.html](http://www.kumc.edu/SAH/OTEd/jradel/Poster_Presentations/PstrStart.html)

“Designing Effective Posters” by Jeff Radel, Ph.D.

<http://www.engfnd.org/poster.html>

“Guidelines for Preparing Posters” by United Engineering Foundation Conferences (2003).

<http://www.uoregon.edu/~jhodder/newpage7.htm>

“Resources: Poster Presentation” by Faculty Institutes Reforming Science Teaching

<http://faculty.washington.edu/scporter/INQUAposters.html>

“Preparing Effective Posters” by Stephen C. Porter, UW Faculty Web Server. The material presented at this web site has been adapted from Connor, Carol Waite (1988). U.S. Geological Survey